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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/505,516	02/17/2000	M. Arif Karabeyoglu	A-67587-1/AJT/MSS	6762

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EXAMINER

MILLER, EDWARD A

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 07/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/505,516

Applicant(s)

KARABEYOGLU ET AL.

Examiner

Edward A. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-19,21 and 49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19,21 and 49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 14-19, 21, and 49 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of Strickler, Anderson, and Goode et al.

As best understood, each reference teaches a fuel as claimed, at least as to broad claim 14. All the disclosed single compound fuels are 1) named or at least 2) notoriously well known. Strickler, e.g., the last sentence of the Abstract, teaches the idea of entrainment of droplets in the in-process gas (during combustion) for follow on combustion, as is apparently the case with applicants. In claim 14, for example, a_{onset} is a property, as defined, that all propellants have. There are no numerical values to which a_{onset} is limited. Further, in claim 14, line 1, the regression rate is "desirable." This claim term is relative, and the examiner defines this term broadly as meaning that the propellant burns, is not defective. There is no suggestion that the prior art propellants are defective; they all burn, and entrainment, as set forth above, is taught. To the extent necessary, variation of specific notoriously well known ingredients and amounts would have been obvious to one of ordinary skill in the subject art. It is well settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). Consider claims 14, 16, 19 and 21, for example. Therein, the fuel is a hydrocarbon, or a paraffin, and such is clearly taught. Note that the term paraffin has several meanings, broadly for hydrocarbons that are saturated, for example, without regard to molecular weight. In this regard, the term is generic to everything from methane gas to octane liquid fuel, to high molecular weight polyethylene. Note Strickler, col. 5, lines 37-38, for example, for a teaching of paraffin hydrocarbons. Note also Hawley (which only applies to wax claims) for such teachings of wax or low mw

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polyethylene, being well known in the art. As to these claims, the properties are or must be inherent, and at least as broadly written. Breadth is not per se indefinite, *In re Garner*, 166 USPQ 138,140. However, it does make the claims amenable to rejection over a wider variety of references.

Where the product appears to be the same or only slightly different, the properties recited would appear to be inherent. The Office does not have testing facilities to determine such. The burden falls on applicant to show that the prior art products do not necessarily or inherently possess the claimed properties. *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966; *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596; *In re Best*, 562 F.2d 1252, 1255; 195 USPQ 430, 433-434; *In re Brown*, 459 F.2d 531, 173 USPQ 685. See also *In re Hallman*, 210 USPQ 609, where applicants must demonstrate that the functional characteristics or properties are not inherent in the prior art used to reject those functional claims. Attorney arguments do not properly substitute for proof, MPEP 716.01(c) and cases cited therein. To the extent that certain composition claims may ultimately be found allowable, such as possibly wax and carbon black, there is a nexus requirement as to the claim limitations and the ostensible unexpected results. Even as to claim 15, with a defined range (equal to or less than ...) of values for a_{onset} , applicants have not submitted any showing to prove that the entrainment as taught in the references above, does not fall within the values set forth.

3. Claims 14-19, 21, and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not perfectly clear what the compositions are, that when burned, produce the desired improved results, as shown in the previous interview. Indeed, the term "desirable" in claim 14, line 1, is a relative term that does not serve to properly set forth the metes and bounds of the invention.

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The term "desirable" in claim 14, for example, is a relative term which renders the claim indefinite. It is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Further, in claim 14, line 16, "promotes entrainment" is likewise relative, in that the degree of improvement actually obtained, or the amount of increased entrainment, is likewise not set forth or reasonably ascertainable. Further, it is not clear if all the compositions literally encompassed by the instant method claims operate as alleged; how does one separate the wheat (with an undefined degree of improved operation) from the chaff (lacking such) as to what the metes and bounds of the claims are. These remain exemplary.

4. Claims 14-19, 21, and 49 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

While the claims appear to be drawn to be inclusive of certain compositions, it is not clear that the compositions are reasonably ascertainable without undue experimentation. One relevant case to this issue is *PPG Industries v. Guardian Industries*, 37 USPQ2d 1618 (CA FC 1996), where a limited set of claims was found to be adequately disclosed. At page 1623, the question of undue experimentation is addressed, and in some cases the specification has been found to be not enabling. *In re Wands*, 8 USPQ2d 1400 (CA FC 1988) refers to certain tests on page 1404. Looking at factors numbered 1) and 8), these are bookends. Here, claim 14 is unlimited in any way by any material, etc., but only by the desired result of entraining droplets. Thus, the claims are very broad, and in view of the substantially infinite number of combinations and permutations of ingredients, the amount of experimentation is difficult to comprehend. Looking at "2) the amount of guidance",

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there is little or none. For 3), there is perhaps one or a few working examples. Looking at 4) and 7), one need only recall the Challenger disaster to appreciate unpredictability in the art. There, the rockets were extensively tested and man rated, with definite compositions, and still the flight rocket “blew up”. These illustrate the unpredictability in this industry. The (5) factor is the state of the prior art. In the prior art, it is known to make hybrid rockets, but there is no apparent basis to determine which substances, which may be used alone, or in combination as taught in the prior art. Thus, there is little to enable the invention as claimed. It appears that the claims are intended to encompass all substances, and then if the ordinary artisan does so and finds that the composition does work according to the invention, then the artisan should pay royalties, but if it doesn’t. then the artisan would not have to pay royalties. However, the crux of a patentable invention should be that any ordinary artisan should be able to practice the claimed invention, with but little (reasonable) experimentation. Otherwise, an applicant for patent would only need to dream up desirable goals, not the methods of accomplishing those goals. Such would not serve to advance the state of the useful arts by progress, it would serve only to advance the areas where progress is needed.

The claims are thus defective under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling, at least as to the broadly worded claims, which would seem to preclude all hybrid combustion methods, without limitation or guidance as to what works as intended. Indeed, the claims are broad enough to cover polyethylene, which applicants state does not work in accordance with their invention. Thus, the burden on appellant is to separate what is patentable from the prior art. Breadth is not per se indefinite, *In re Garner*, 166 USPQ 138,140. However, it does make the claims amenable to rejection over a wider variety of references.

The aspect of “entraining droplets” is critical or essential to the practice of the invention, but not adequately enabled (without adequate guidance to enable selection of substances that are

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operative) by the disclosure. Also see *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The specification does not enable any person of ordinary skill in the art, to practice the invention commensurate in scope with the broad claims.

Applicants' arguments and broad traversal that the ordinary artisan can figure out how to practice the invention, are inadequate. Applicants have not addressed any of the *Wands* factors. Such is not persuasive to overcome the rejection.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning either this or an earlier communication from the Examiner should be directed to Examiner Edward A. Miller at (703) 306-4163. Examiner Miller may normally be reached Monday-Thursday, from 10 AM to 7 PM.

If attempts to reach Examiner Miller by telephone are unsuccessful, his supervisor Mr. Carone can be reached at (703) 306-4198. The Group fax number is (703) 305-7687.

If there is no answer, or for any inquiry of a general nature or relating to the application status, please call the Group receptionist at (703) 308-1113.

Miller/em
July 26, 2002



EDWARD A. MILLER
PRIMARY EXAMINER